PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in High Frequency Transformers.

I, ARCHIBALD MONTGOMERY LOW, Captain in His Majesty's Army, of Royal Flying Corps Experimental Works, Feltham, Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to high frequency transformers and while it is capable of application to transformers in general it is especially suited for transformers that are to be employed in wireless electrical operations and more particularly for the wireless control of torpedoes or other object which it may be desired to control from a distance.

The invention consists in a transformer having a winding comprising at least two sets of turns arranged eccentrically to one another, the turns constituting one set being of smaller diameter than the other set.

The invention more specifically consists in a transformer in which the secondary winding comprises two sets of turns one within the other and eccentrically arranged in relation to one another, the turns constituting one set being of smaller diameter than those of the other set.

The accompanying drawing illustrates diagrammatically one form of coil in accordance with the invention.

In carrying my invention into effect in one convenient manner I form my improved transformer with a winding (for example, the secondary) comprising two sets of turns *a b* arranged eccentrically to one another so that the respective turns approach one another more nearly at one part than at any other, and the turns constituting one set such as *a* I make of a diameter smaller than the turns of the other set such as *b*. The primary coil is shown at *c* and the arrangement is such that the potential varies from one end of the coil to the other and the total effect is that of two separate coils under the same inductance which having different choke values, but being connected together, can have different voltages and consequently current factors lagging an amount depending on the resistance and frequency of the inducing wave. Hence the transformer produces a small high tension current and a larger low tension current, the phases of which are such that one lags behind the other, and it is found that such a transformer is particularly suitable for use in the wireless control of torpedoes, aeroplanes or other objects which it may be desired to control from a distance.

It will be understood, however, that the invention is not to be limited to such applications as it may be applied to transformers in general and the form and construction of the transformer as also the number of turns in the respective coils may be suitably modified to suit any particular practical requirements.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A high frequency transformer having a winding comprising at least two sets of turns arranged eccentrically to one another, the turns constituting one set being of smaller diameter than those of the other set.

2. A high frequency transformer in which the secondary winding comprises two sets of turns, one within the other and eccentrically arranged in relation to one another, the turns constituting one set being of smaller diameter than those of the other set.

3. An improved high frequency transformer, substantially as hereinbefore described.

Dated this 28th day of December, 1917.

MARKS & CLERK.

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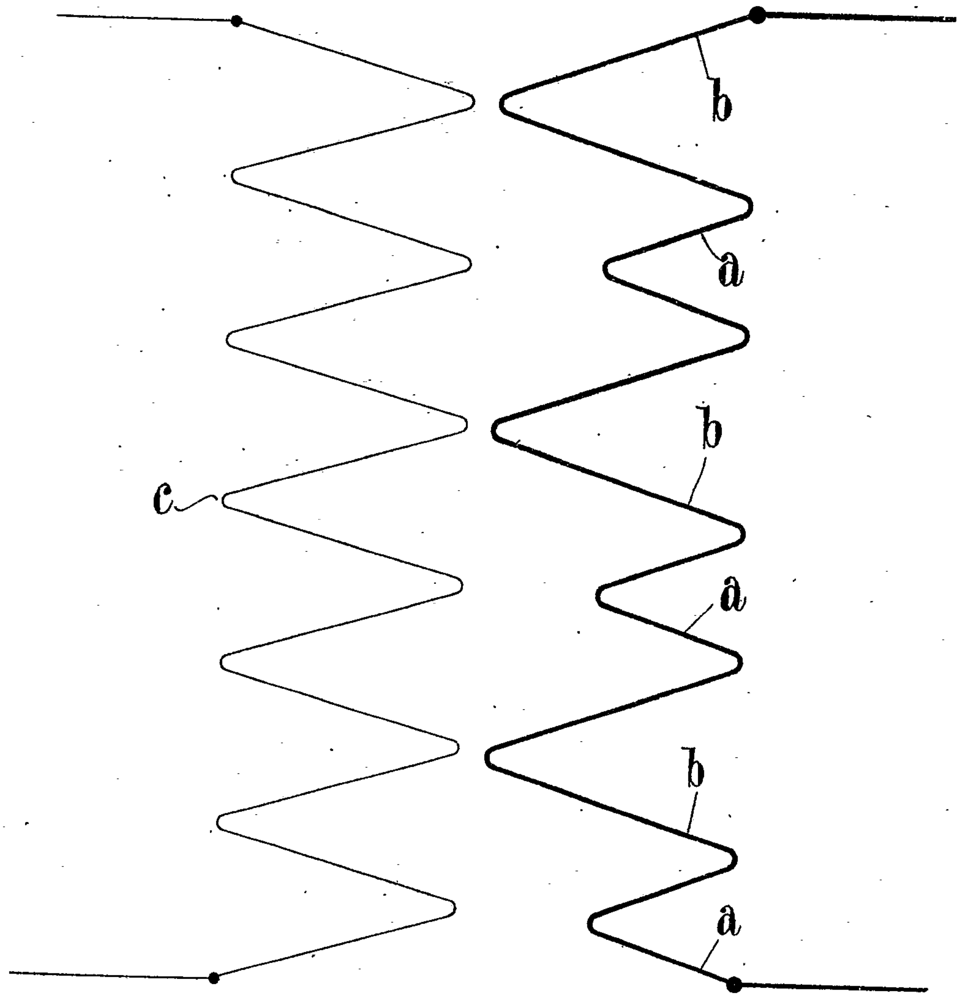
[*Price* 1/-]

[This Drawing is a reproduction of the Original on a reduced scale.]



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